

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

| | | | |
|--|--|--|--|
| Applicant's or agent's file reference see form PCT/ISA/220 | | FOR FURTHER ACTION See paragraph 2 below | |
| International application No. PCT/EP2005/001479 | International filing date (day/month/year) 14.02.2005 | Priority date (day/month/year) 12.02.2004 | |
| International Patent Classification (IPC) or both national classification and IPC H04L12/56 | | | |
| Applicant CISCO TECHNOLOGY INC. | | | |

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

| | |
|--|--|
| Name and mailing address of the ISA: | Authorized Officer |
|  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Schneider, G Telephone No. +49 89 2399-7515 |
|  | |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

107554047
International application No.
PCT/EP2005/001479

JC20 Rec'd PCT/PTO 21 OCT 2005

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material:
 in written format
 in computer readable form
 - c. time of filing/furnishing:
 contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- the entire international application,
 claims Nos. 24-47

because:

- the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
 the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 24-47 are so unclear that no meaningful opinion could be formed (*specify*):
- see separate sheet**
- the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- no international search report has been established for the whole application or for said claims Nos.
- the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

- has not been furnished
 does not comply with the standard

the computer readable form

- has not been furnished
 does not comply with the standard

- the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

- See separate sheet for further details

**WRITTEN OPINION OF THE
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International application No.
PCT/EP2005/001479

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or
industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|-------------------------------|------|--------|------|
| Novelty (N) | Yes: | Claims | 1-23 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-23 |
| Industrial applicability (IA) | Yes: | Claims | 1-47 |
| | No: | Claims | |

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

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International application No.

PCT/EP2005/001479

- 1 The following document D1-D2 is referred to in this communication;

D1:"An Offline Hybrid IGP/MPLS Traffic Engineering Approach under LSP Constraints", Eueung Mulyana, Ulrich Killat

D2:"Optimized Routing Adaptation in IP Networks Utilizing OSPF and MPLS", Anton Riedl

- 2 Although claims 1,24,25,33,47 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.
- 3 The wording ("the routing using a second routing protocol is similar to the routing using a first routing protocol") of claim 7 is unclear, thereby rendering the definition of the subject-matter of said claim unclear (Article 84 EPC).
- 4 Due to the major clarity objections, no detailed examination can be carried out. For accelerating the procedure some remarks are given for claims 1-23.
- 5 Document D1, which is considered to represent the most relevant state of the art, already discloses applying the wording of Claim 1, as far it can be understood and the references of D1:
A method of determining traffic paths between one or more source-destination node pairs in a communications network, comprising
starting from a first set of paths between said source-destination node pairs. (page 2, line 4 "A is a set of arcs the networks links")
determining a second set of paths between said source-destination node pairs (page 2 line 16 "Let Auv be defined as a set of links that belong to the shortest path for the flow")
while taking into account a set of constraints, such that said second set of paths emulates said first set of paths. (page 3, line 19 "Eq. 9 describes the desired flow conservation constraints that ensure the desired traffic flow to be routed from source

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- to destination")
- 5.1 The subject-matter of claim 1 therefore differs from this known D1 in that claim 1 also include the feature of:
second sets of paths emulates said first said of paths. This feature has the technical effect of hiding the routing implementation.
- 5.2 Starting from D1, the person skilled in the art is confronted with the problem of how to migrate from IGP to MPLS.
- 5.3 It is self evident from D1 that the person skilled in the art is immediately confronted with said problem, because the problem of migration is indicated in D1(cf . p 1,line 12 "seamless migration from the current IP network running IGP")
- 5.4 It is however generally known to the person skilled in the art that the feature "second sets of paths emulates said first said of paths" is an equivalent to the feature (cf. p 1, l. 20 :"IGP and MPLS are working in the same layer.") of document D1 and can be interchanged with that feature where circumstances make it desirable.
- 5.5 The subject matter does not involve an inventive step in the sense of Article 32(3) PCT.
- 6 The additional features of dependent claims 2-23 appear to add nothing of inventive significance to claim 1, as the additional features introduced by said dependent claims refer only to minor implementing details which are disclosed or obviously derivable from the cited prior art references or fall within the general knowledge of a person skilled in the art.

claims 2-10 : D1 abstract: "hybrid MPLS/IGP" protocol

claims 11: D1 abstract: "obtain better load distributions"

claim 12 : D1:page 2,line 10 D2 page 1 right col ECMP"

claim 13,14 :D1: abstract "MPLS"

claim 15: D1 page 3 "set W as given set"

claim 16: D1 abstract "obtain better load distributions"; the fraction with an integer nominator or denominator is obvious for a person skilled in the art.

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claim 17-23:D1 par 3 genetic algorithm

- 7 Claim 47 contains references to the drawings. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.